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A.D. 1866, 20th *FEBRUARY*. N° 522.

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S P E C I F I C A T I O N

OF

GEORGE HILL AND DAVID HILL.

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TRUSSES.

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LONDON:

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1866.







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A.D. 1866, 20th FEBRUARY. N° 522.

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**Trusses.**

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**LETTERS PATENT** to George Hill and David Hill, of the City of Manchester, in the County of Lancaster, for the Invention of “**IMPROVEMENTS IN TRUSSES.**”

Sealed the 17th August 1866, and dated the 20th February 1866.

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**PROVISIONAL SPECIFICATION** left by the said George Hill and David Hill at the Office of the Commissioners of Patents, with their Petition, on the 20th February 1866.

We, **GEORGE HILL** and **DAVID HILL**, of the City of Manchester, in the  
5 County of Lancaster, do hereby declare the nature of the said Invention for  
“**IMPROVEMENTS IN TRUSSES,**” to be as follows:—

We attach to the band of web, leather, or other material which encircles the  
waist two, three, or more elastic metal bands jointed together so that they  
can yield to the ever changing and unequal motions of the body of the wearer,  
10 and to the central metal band we fix a thin metal plate to which we attach  
the pad or pads by means of lock joints formed as follows:—To the top of each  
pad we attach a disc having a number of grooves or notches, and joint the  
disc to a small frame held by a screw to the aforesaid thin metal plate, but



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*G. & D. Hill's Improvements in Trusses.*

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before being definitively fixed the bottom of the plate is entered into one or other of the grooves or notches in the disc according to the pressure required to be exerted. In some cases we dispense with the additional metal plate, and attach the pads to the central metal band, and also instead of grooves or notches in the disc in the top of the pad we form teeth gearing into a worm 5 working in the small frame, so that the pressure of the pad can be altered without removing it from the band.

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**SPECIFICATION** in pursuance of the conditions of the Letters Patent, filed by the said George Hill and David Hill in the Great Seal Patent Office on the 18th August 1866.

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**TO ALL TO WHOM THESE PRESENTS SHALL COME**, we, **GEORGE HILL** and **DAVID HILL**, of the City of Manchester, in the County of Lancaster, send greeting.

**WHEREAS** Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Twentieth day of February, in the year of our 15 Lord One thousand eight hundred and sixty-six, in the twenty-ninth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto us, the said George Hill and David Hill, Her special license that we, the said George Hill and David Hill, our executors, administrators, and assigns, or such others as we, the said George Hill and David Hill, our executors, 20 administrators, and assigns, should at any time agree with, and no others, from time to time, and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "**IMPROVEMENTS IN TRUSSES**," upon the condition 25 (amongst others) that we, the said George Hill and David Hill, our executors or administrators, by an instrument in writing under our, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six 30 calendar months next and immediately after the date of the said Letters Patent.

**NOW KNOW YE**, that we, the said George Hill and David Hill, do hereby declare the nature of our said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the 35



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*G. & D. Hill's Improvements in Trusses.*

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following statement thereof, reference being had to the Figures on the accompanying Sheet of Drawings, and to the letters of reference marked thereon (that is to say):—

This Invention relates to trusses for hernia and other complaints, and  
5 consists in certain improvements for enabling the truss to be worn with perfect ease, for enabling the pressure of the pad to be regulated to any extent required, and for obtaining the facility of changing the pads to any size to suit the wearer.

We attach to the outside of the band of web, leather, or other material  
10 which encircles the body two, three, or more elastic metal bands jointed together, and connect the pad or pads to the central band in various ways. Although in some cases it may be advisable to have more than three elastic metal bands, we generally prefer three, the one in the centre to be at the proper distance above the groin and the two others extending round the hip  
15 joints.

On the accompanying Sheet of Drawings Fig. 1 is a perspective view of one of our improved trusses; Figs. 2 and 3, 4 and 5, 6 and 7, and 8 and 9, end and front views of parts of different trusses drawn about full size; and Fig. 10 is an end view shewing the adaptation of our improvements for suspension purposes.

20 In Fig. 1 *a* represents the band of web, leather, or other material which encircles the body; *b*, the buckle for fastening it at the back; *c*, *d*, the elastic metal bands attached to the outside of the band *a*; and *e*, the pad, the metal bands and pads being marked by the same letters on the other Figures.

To the central metallic band *c*, Figs. 1, 2, and 3, we fix a thin metal plate *f*,  
25 to which we attach the pad *e* by means of lock joints formed as follows:—To the top of each pad is attached a metal disc or wheel *g*, having in its periphery a number of grooves or notches *h*, and the disc is jointed to the small frame *i* which clips the metal plate *f* and is fastened to it by the screw *k* after the pad has been adjusted to the proper position and after the bottom of the  
30 plate has been entered into one or other of the grooves or notches according to the pressure required to be given to the pad.

In the arrangement shewn in Figs. 4 and 5, the pad *e*, notched disc *g*, *h*, and small frame *i* are similar to those shewn in Figs. 1, 2, and 3, but instead of employing the additional horizontal plate *f* we adjust and fix a vertical  
35 plate *j* to the central metallic band *c*, to which plate *j* the small frame *i* is clipped and screwed after the pad has been placed in its proper position and the bottom edge of the plate has been entered into one or other of the notches in the disc according to the pressure required.



*G. & D. Hill's Improvements in Trusses.*

In another arrangement, shewn in Figs. 6 and 7, we fix to the top of the pad *e* a metallic strap or plate *l*, having in it a slot *m*, and in the central band we form a groove or slot *n*, through which is passed the upper part of the plate *l*, and then the parts are held firmly together by the screw and nut *o*. The strap or plate *l* can be raised and lowered and shifted sideways 5 as desired, and the plate can also be bent more or less according to the pressure required to be given to the pad.

In Figs. 8 and 9 we shew the application of a worm and toothed wheel for regulating the pressure of the pad without removing it from the central band. The disc *p* at the top of the pad *e* is formed into a toothed wheel, into 10 which is geared the worm *q* working in bearings in the small frame *r*, and having a knob *s* by which it can be turned, so that when the pad is properly placed more or less pressure can be exerted upon it by turning the knob and worm one way or the other.

In Fig. 10 the seat or support used for suspension purposes is shewn at *t*, 15 it is fixed to a rod or plate *u* having at the top a notched disc jointed to a small frame, which is fastened either to the central band or to a plate which can be adjusted vertically and afterwards fixed to the central band. When the pad or seat is properly adjusted and placed in position, it has no tendency to shift from the part affected, for whatever may be the movements or con- 20 tortions of the body the side bands *d* yield at the joints and enable the central band *c* to be perfectly steady. In some cases we attach to the band which encircles the body two elastic metal bands instead of three or more, and joint the two bands at the front, the pad or pads being connected to one or both of the bands at the side of the joints, and we may here remark that our 25 system of jointing the metal bands at the front of the body and passing the bands round to the back enables the hips to act as levers, and thereby cause more pressure to be exerted upon the pad or pads than in any other description of truss, and as the metal bands are attached to the outside of the band of web, leather, or other material which encircles the body the metal bands do 30 not corrode or lose their temper.

Having now described the nature and particulars of our said Invention, and the manner in which the same is to be performed, we desire it to be understood that we claim in trusses,—

First, the system of attaching to the outside of the band of web, leather, 35 or other material which encircles the body two, three, or more elastic metal bands jointed together for enabling great pressure to be exerted on the pad or pads, and yet allow perfect freedom of movement.

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*G. & D. Hill's Improvements in Trusses.*

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And, secondly, the various modes of attaching the pads to the metal bands and regulating the pressure of the pads, as all such improvements are herein described and illustrated in the accompanying Sheet of Drawings.

5 In witness whereof, we, the said George Hill and David Hill, have hereunto set our hands and seals, this Sixteenth day of August, in the year of our Lord One thousand eight hundred and sixty-six.

GEORGE HILL. (L.S.)

DAVID HILL. (L.S.)

10 Signed, sealed, and delivered by the within-named George Hill and David Hill, in the presence of

E. J. HUGHES,  
Patent Agent,  
Manchester.

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LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,  
Printers to the Queen's most Excellent Majesty. 1866.













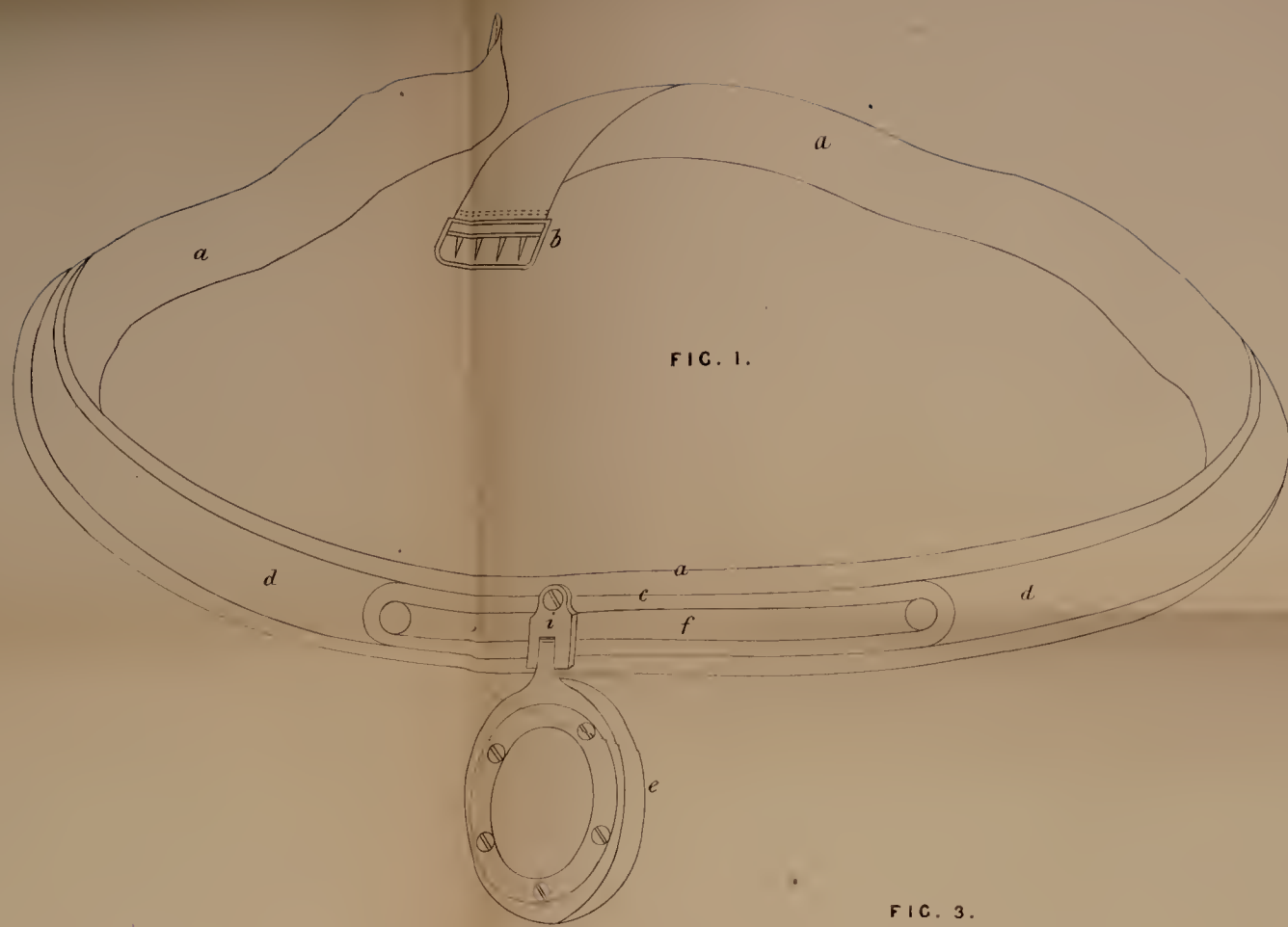


FIG. 1.

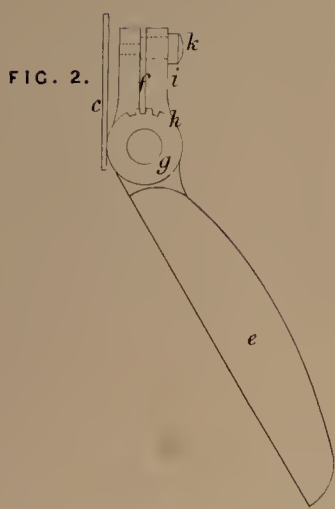


FIG. 2.

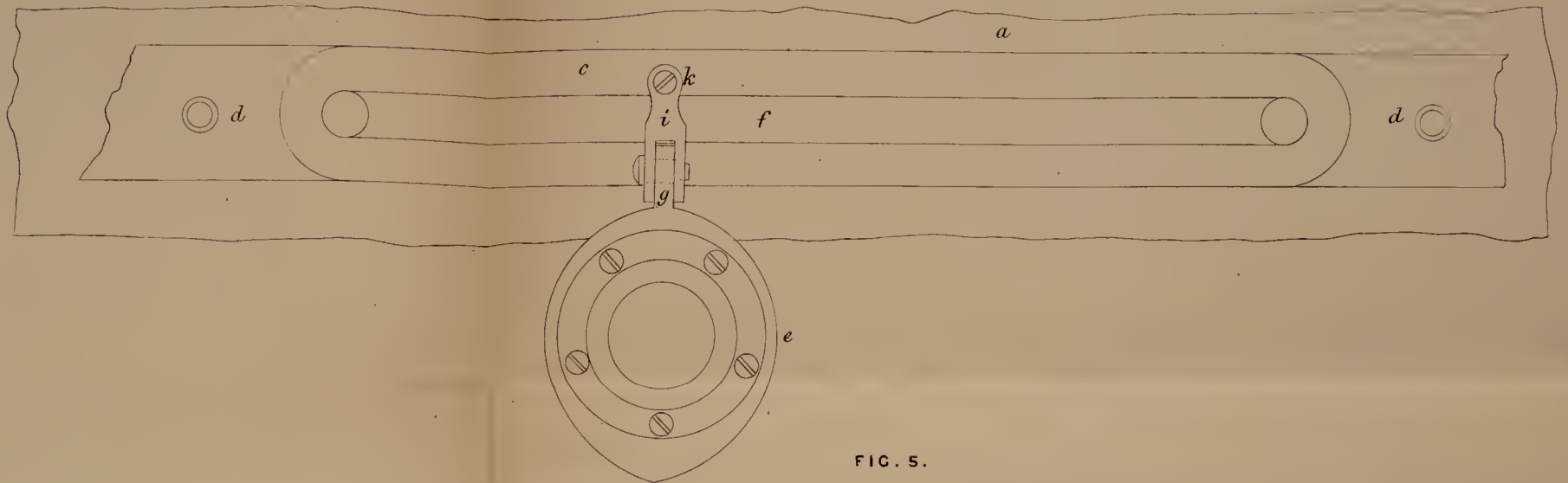


FIG. 3.

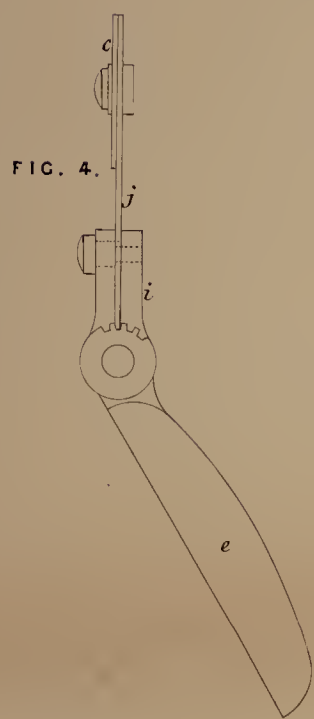


FIG. 4.

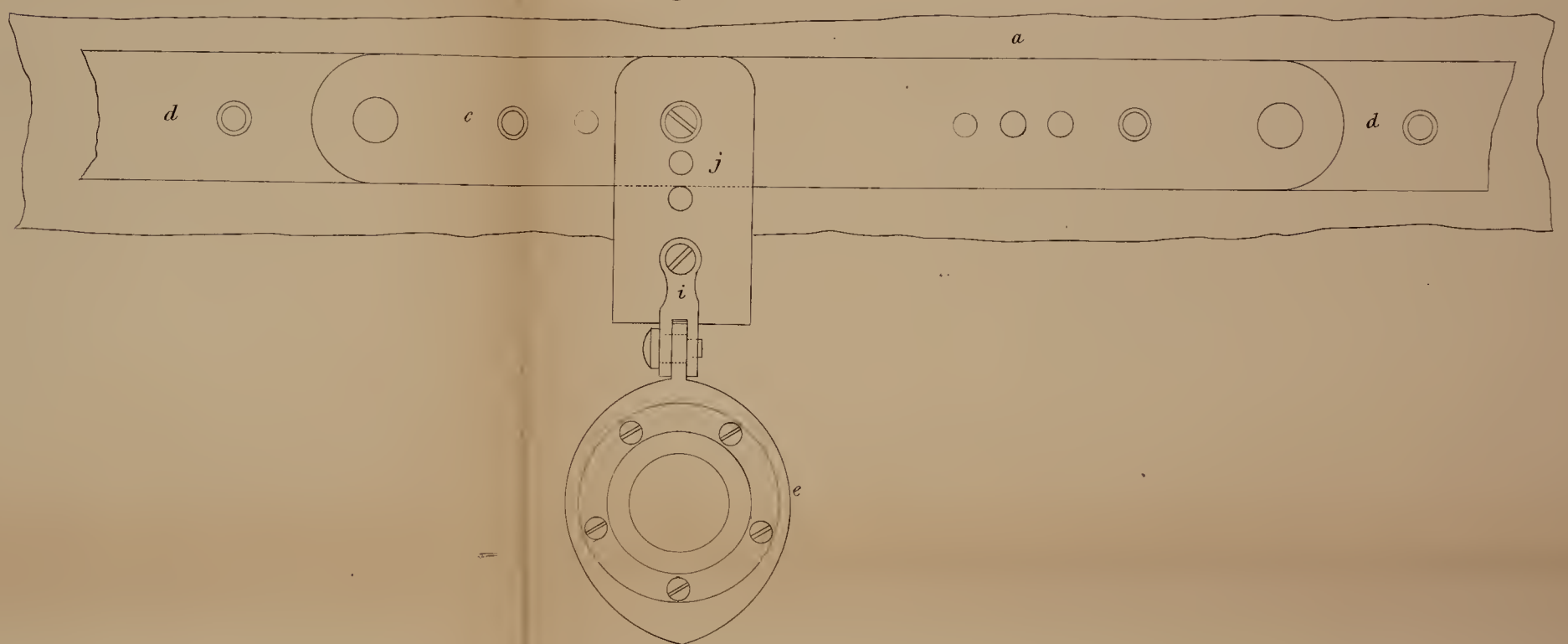


FIG. 5.

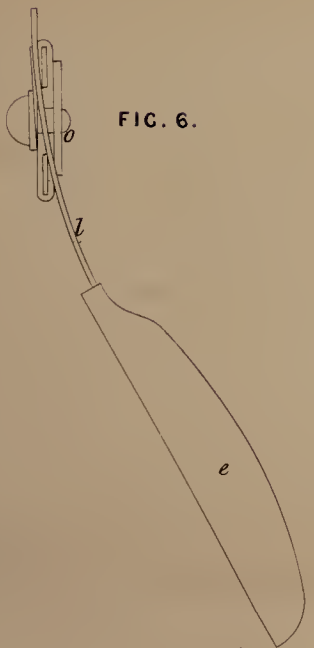


FIG. 6.

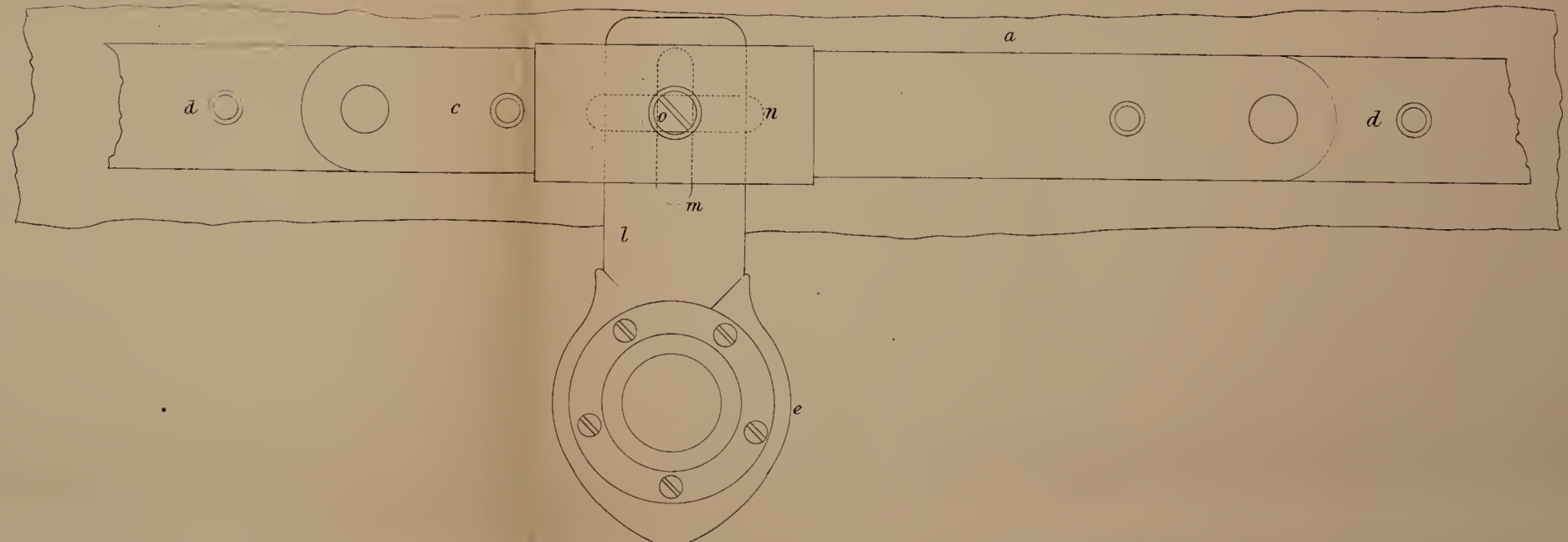


FIG. 7.

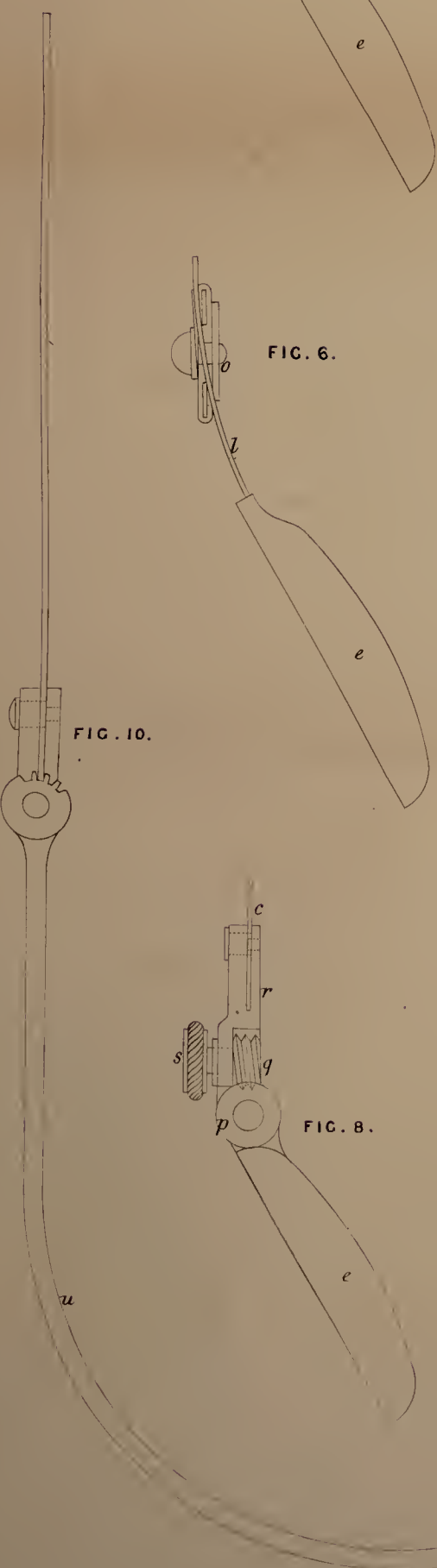


FIG. 8.

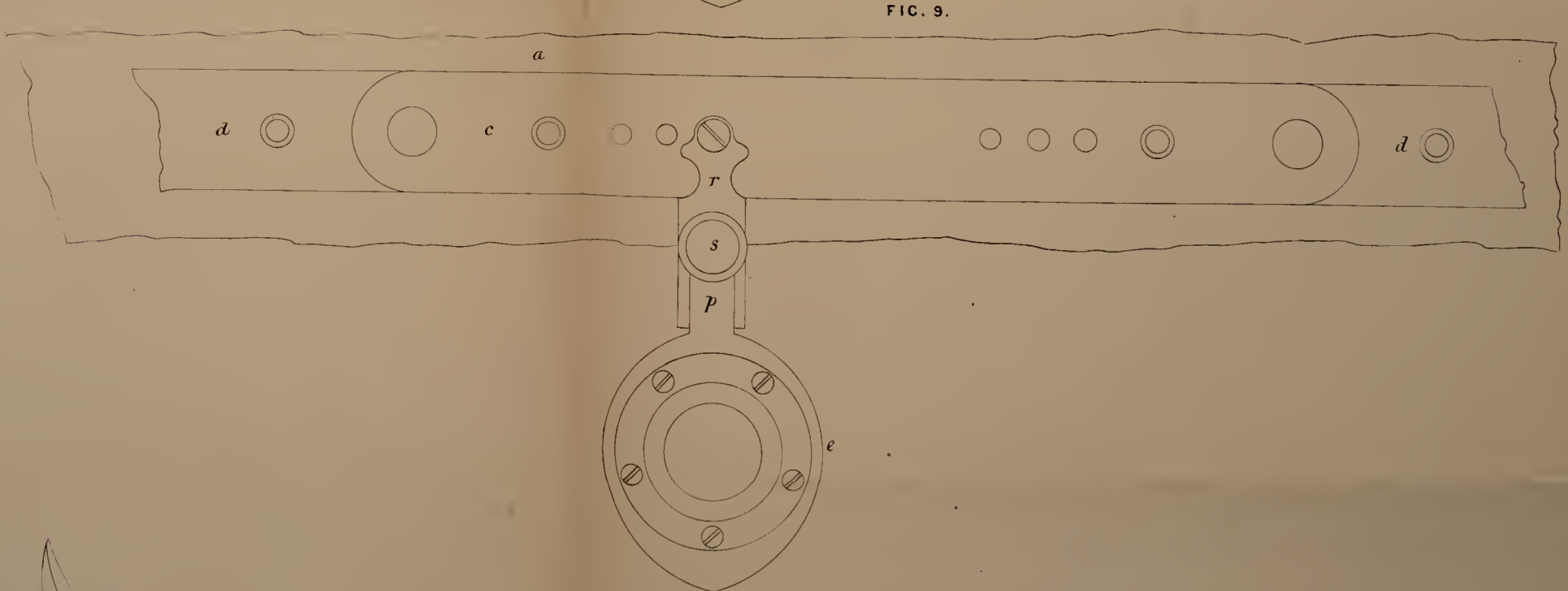


FIG. 9.

126